



**2013**  
**Air Quality Division**

*ANNUAL AIR EMISSIONS INVENTORY QUESTIONNAIRE*

*Dry Cleaning Equipment*

The 2013 Dry Cleaning Annual Emissions Inventory Questionnaire includes 4 forms that are required to be completed and submitted to the Air Quality Division. Instructions for each form are included below. Upon completion, submit all forms along with the signature by the Responsible Official of the facility within 90 days of receipt of a letter from the Department to the address below.

**FORM 1: Facility General Information**

Complete all fields as requested.

**FORM 2: Equipment, & Process Data**

Table 1: List equipment, source category, gallons of PERC purchased, ATO # and the emission control device if any.

Table 2: List the total monthly PERC purchased and the amount consumed.

**FORM 3: Emissions Data**

Input the total gallons of PERC used for the year 2013.

Based on the type of fuel used (Gasoline, Diesel, or Natural Gas/Liquid Propane), choose the appropriate table to input the boiler heat input rate (MM Btu/hr) and the total hours operated during the calendar year 2013. Once data is ***inputted, the formulas are set to complete the calculations. Therefore, do not move or change any of the fields or columns. If moved it will result incorrect calculations.*** A sample of the boiler calculations are provided on Form 2.

**FORM 4: Summary & Certification**

A summarization of all the emissions by each pollutant will be listed within this form. All reports submitted to the Department should be certified true and accurate by the Responsible Official of the facility. This person is the owner or operator of the facility. **If there is a change of the Responsible Official of the facility, please notify the Department with an additional letter stating the change.**

If you have any question or have difficulty completing this form, please contact Michael Burton at [burton.michael@azdeq.gov](mailto:burton.michael@azdeq.gov) or (602) 771-4562. Remember to make photocopies of the completed questionnaire prior to mailing for your records/reference. Please mail the emission inventory questionnaire form to the following address:

Arizona Department of Environmental Quality  
Attention: Michael Burton  
Air Quality Division, SIP Section  
1110 West Washington Street  
Phoenix, AZ 85007

**FORM 1: FACILITY GENERAL INFORMATION****YEAR 2013****SECTION I: *Plant Identification & Mailing Information***

Company Name: \_\_\_\_\_

Place Name: \_\_\_\_\_ Place ID # : \_\_\_\_\_

Mailing Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_

County: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Permit # or LTF #: \_\_\_\_\_ General Permit: Yes ☐ No ☐**SECTION II: *Emissions Inventory Contact***

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

**SECTION III: *Confidential Request****Pursuant to Arizona Revised Statutes §49-432 and §49-201, do you claim the Emissions Inventory data submittal confidential.* Yes ☐ No ☐*If yes include which portions of the inventory are confidential along with a brief explanation:*


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**FORM 2: EQUIPMENT & PROCESS DATA**
**YEAR 2013**
**Table 1: Equipment & Process Data**

Equipment (check all equipment on-site)	<input type="checkbox"/> Only Dry-to-Dry <input type="checkbox"/> Only Transfer <input type="checkbox"/> Combination <input type="checkbox"/> Boiler
Source Category (check one)	<input type="checkbox"/> Small Area Source <input type="checkbox"/> Large Area Source
Gallons of Perchloroethylene purchased in 2013	
ATO#	
Emission Control Device (check one)	<input type="checkbox"/> Refrigerated Condenser <input type="checkbox"/> Carbon Absorber <input type="checkbox"/> None

**Table 2: Yearly Perchloroethylene Purchase & Consumed**

	Month	Perchloroethylene Purchased (Gallons)	Perchloroethylene Consumed (Gallons)
<b>Perchloroethylene purchase &amp; consumed for the year 2013</b>	January		
	February		
	March		
	April		
	May		
	June		
	July		
	August		
	September		
	October		
	November		
	December		
Totals			

Sample Calculation: Emissions =  $\frac{\text{Maximum Heat Input Rate (MM Btu per hr)} \times \text{Hours of Operation (hrs)} \times \text{Emission Factor (pounds per MM Btu per hr)}}{2000 \text{ pounds per ton}}$

For a Boiler with a maximum heat input rate of 20MM Btu per hr and using Natural Gas fuel and operated for 1500 hours during the year 2013, the emissions of Nitrogen Oxides (Nox) will be as follows:

$$\text{Emissions} = \frac{20 \text{ MM Btu per hr} \times 1500 \text{ hours} \times 0.0952 \text{ pounds per MM Btu per hr}}{2000 \text{ pounds per ton}} = 1.428 \text{ tons per year}$$

**FORM 3: EMISSIONS CALCULATIONS**
**YEAR 2013**
**Dry Cleaning Process**

Pollutants	Total PERC. Consumed gallons/year	Emission Factor pounds/gallon	Emissions tons/year
PERC		13.5	

Conversion Factors - MM = 1,000,000 M = 1,000 1 Therm = 100,000 BTUs. 1 MMBTU = 1,000,000 BTUs. 1HP-hr = 2546.15 BTUs

Boiler	FUEL - NATURAL GAS		FUEL - DIESEL		FUEL - BUTANE		FUEL - PROPANE	
	Max. Rated Capacity (MMBtu- hr)	Operational Hours (hours/year)	Max. Rated Capacity (MMBtu-hr)	Operational Hours (hours/year)	Max. Rated Capacity (MMBtu-hr)	Operational Hours (hours/year)	Max. Rated Capacity (MMBtu-hr)	Operational Hours (hours/year)
Pollutants	Emission Factor pounds/MMBtu	Emissions tons/year	Emission Factor pounds/MMBtu	Emissions tons/year	Emission Factor pounds/MMBtu	Emissions tons/year	Emission Factor pounds/MMBtu	Emissions tons/year
NOx	0.0980		0.1460		0.2059		0.2077	
CO	0.0824		0.0365		0.0353		0.0350	
PM10	0.0075		1.56E-06		0.0059		0.0066	
PM	0.0075		0.0240		0.0059		0.0066	
SOx	0.0006		0.8290		-		-	
VOCs	0.0054		0.0025		0.0041		0.0033	
HAPs	1.33E-02		1.51E-02		0.0020		0.0022	

**FORM 4: SUMMARY & CERTIFICATION****YEAR 2013**

All the emissions for each pollutant are totalled and entered in the table below.

Pollutant	Tonnage (tons per year)
Particulate Matter (PM)	
Particulate Matter Less Than 10 Microns (PM10)	
Nitrogen Oxides (NOx)	
Sulfur Oxides (SOx)	
Volatile Organic Compounds (VOC)	
Carbon Monoxide (CO)	
Perchloroethylene (PERC)	
Hazard Air Pollutants - excluding PERC (HAPs)	

**Certification of Truth & Accuracy**

I certify that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. All information not identified by me as confidential in nature shall be treated by the Arizona Department of Environmental Quality as public record.

Signature of Responsible Official:

Date:

Print Name:

Title: